



Attorney Docket No. 1793.1178

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Ki-hyun KIM et al.

Application No.: 10/765,278

Group Art Unit: 2133

Filed: January 28, 2004

Examiner: Unassigned

For: METHOD OF GENERATING PARITY DATA BASED ON LOW-DENSITY PARITY
CHECK MATRIX AND APPARATUS THEREFOR

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure provisions of 37 CFR § 1.56, there is hereby provided certain information which the Examiner may consider material to the examination of the subject U.S. patent application. It is requested that the Examiner make this information of record if it is deemed material to the examination of the subject application.

1. Enclosures accompanying this Information Disclosure Statement are:

- 1a. ☒ Form PTO-1449.
- 1b. ☒ Copy(ies) of IDS citation(s), except for U.S. Patents and U.S. Patent Application publications for applications filed on or after June 30, 2003.
- 1c. ☒ English language copy of a communication(s) from a foreign Patent Office or a PCT International Search Report.
- 1d. ☐ English language translation (Abstract Only) attached to each non-English language publication.
- 1e. ☐ Explanations of Relevancy of References (ATTACHMENT 1(e), hereto) for providing a concise explanation of each non-English publication.
- 1f. ☐ List of Copending Applications (ATTACHMENT 1(f), hereto).
- 1g. ☐ List of Additional Submitted Documents (ATTACHMENT 1(g), hereto).

2. ☒ This Information Disclosure Statement is filed under 37 CFR §1.97(b):

(Check either Item 2a or 2b or 2c or 2d)

- 2a. ☐ Within three months of the filing date of a national application;
- 2b. ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application.
- 2c. ☒ Before the mailing of a first Office Action on the merits; or
- 2d. ☐ Before the mailing of a first Office Action after the filing of a Request for Continued Examination under § 1.114.

3. ☐ This Information Disclosure Statement is filed under 37 CFR §1.97(c) after the period specified in paragraph 2 above but before the mailing date of any of a Final Office Action under § 1.113, a Notice of Allowance under § 1.311 or an action that otherwise closes prosecution in the application, AND

(Check either Item 3a or 3b; Item 3b to be checked if any reference known for more than 3 months)

- 3a. ☐ The § 1.97(e) Statement in Item 5 below is applicable; OR
 3b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) is:
☐ enclosed.
☐ to be charged to Deposit Account No. 19-3935.

4. ☐ This Information Disclosure Statement is filed under 37 CFR §1.97(d) after the period specified in paragraph 3 above, but on or before payment of the Issue Fee, AND

- 4a. ☐ The § 1.97(e) Statement in Item 5 below is applicable; AND
 4b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) is:
☐ enclosed.
☐ to be charged to Deposit Account No. 19-3935.

5. ☐ Statement under § 1.97(e) *(applicable if Item 3a or Item 4 is checked)*

(Check either Item 5a or 5b)

- 5a. ☐ In accordance with 37 CFR §1.97(e)(1), it is stated that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
 5b. ☐ In accordance with 37 CFR §1.97(e)(2), it is stated that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known by any individual designated in §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

6. ☐ This is a continuation/divisional/continuation-in-part application under 37 CFR § 1.53(b).

(Check appropriate Items 6a and/or 6b)

- 6a. ☐ Copies of the publications listed on the attached Form PTO-1449 which were previously cited in prior application Serial No. __, filed on __, and which is relied on for an earlier effective filing date for the subject application under 35 U.S.C. § 120, have been omitted pursuant to 37 CFR § 1.98(d).
 6b. ☐ Copies of the publications listed on the attached Form PTO-1449 which were not previously cited in prior application Serial No. __, filed on __, and which is relied on for an earlier effective filing date for the subject application under 35 U.S.C. § 120, are provided herewith.


7. ☐ This is a Request for Continued Examination under 37 CFR § 1.114.
(Check either Item 7a or 7b)
- 7a. ☐ The Issue Fee has not been paid.
- 7b. ☐ A Petition to Withdraw from issue under 37 CFR §1.313(c) is filed concurrently herewith or has been granted. A continuation application under 37 CFR § 1.53(d) or Request for Continued Examination under 37 CFR 1.114, after payment of the Issue Fee is proper in accordance with 37 CFR § 1.53(d)(1)(ii) or 37 CFR 1.114(a), respectively.
8. ☐ This is a Supplemental Information Disclosure Statement.
(Check either Item 8a or 8b)
- 8a. ☐ This Supplemental Information Disclosure Statement under 37 CFR § 1.97(f) supplements the Information Disclosure Statement filed on _____. A bona fide attempt was made to comply with 37 CFR § 1.98, but inadvertent omissions were made. These omissions have been corrected herein. Accordingly, additional time is requested so that this Supplemental IDS can be considered as if properly filed on _____.
- 8b. ☐ This Supplemental Information Disclosure Statement is timely filed within one (1) month of the Notice under 37 CFR § 1.97 and 1.98, mailed _____. (MPEP 609 C(1), Form & 6.49, Rev. 1, Feb. 2000, pp. 600-107)
9. ☐ In accordance with 37 CFR § 1.98, a concise explanation of what is presently understood to be the relevance of each non-English language publication is:
(Check appropriate Items 9a, 9b, 9c and/or 9d)
- 9a. ☐ satisfied for the non-English language publication(s) cited on the enclosed "English language version of the search report or action which indicates the degree of relevance found by the foreign office". (See MPEP § 609, Minimum Requirements for an Information Disclosure Statement, Part A(3): Concise Explanation of Relevance, 8th Ed., Rev. 2)
- 9b. ☐ set forth in the application.
- 9c. ☐ satisfied because an English language translation (Abstract Only) is attached to each non-English language publication.
- 9d. ☐ enclosed as Attachment 1(e), hereto.
10. No admission is made that the information cited in this Statement is, or is considered to be, material to patentability nor a representation that a search has been made (other than search report(s) from a counterpart foreign application or a PCT International Search Report, if submitted herewith). 37 CFR §§ 1.97(g) and (h).

11. The Commissioner is authorized to credit any overpayment or charge any additional fee required under 37 CFR § 1.17 for this Information Disclosure Statement and/or Petition to Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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Sheet 1 of 1

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| FORM PTO-1449 | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | ATTORNEY DOCKET NO. 1793.1178 | APPLICATION NO. 10/765,278 |
| LIST OF REFERENCES CITED BY APPLICANT (Use several sheets if necessary) | | FIRST NAMED INVENTOR Ki-hyun KIM et al. | |
| | | FILING DATE January 28, 2004 | GROUP ART UNIT 2133 |

U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | | DOCUMENT NO. | DATE | NAME | CLASS | SUB- CLASS | FILING DATE |
|----------------------|----|-----------------|------|------|-------|---------------|----------------|
| | AA | | | | | | |
| | AB | | | | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NO. | DATE | COUNTRY | CLASS | SUB- CLASS | TRANSLATION YES NO | |
|--|----|-----------------|------|---------|-------|---------------|-----------------------|--|
| | AC | | | | | | | |
| | AD | | | | | | | |

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

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| | AE | Sridhar, N., et al., "Algorithms for the structural diagnosis and decomposition of sparse, underconstrained design systems", Computer-Aided Design, Vol. 28, No. 4, April 1996, pp. 237-249. |
| | AF | Cheung, L. K., et al., "The Bordered Triangular Matrix and Minimum Essential Sets of a Digraph", IEEE Transactions on Circuits and Systems, Vol. CAS-21, No. 5, September 1974, pp. 633-639. |
| | AG | Zhang, T., et al., "A Class of Efficient-Encoding Generalized Low-Density Parity-Check Codes", Proc., IEEE Inter. Conference on Acoustics, Speech, and Signal Processing, ICASSP '01, Vol. 4, May 2001, pp. 2477-2480. |
| | AH | Richardson, T. J., et al., "Efficient Encoding of Low-Density Parity-Check Codes", IEEE Transactions of Information Theory, IEEE Inc., Vol. 47, No. 2, February 2001, pp. 638-656. |

| | |
|---|-----------------|
| EXAMINER | DATE CONSIDERED |
| *EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | |